SUN MAG-81 MAGNETIC TIMING UNIT

OPERATING INSTRUCTIONS

L[illegible]RE KIT
NO. 179 J30

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TESTING INFORMATION

The Magnetic Timing Probe (where applicable) can be used in place of the conventional timing light. In place of observing the crankshaft timing marks to determine initial timing and timing advance, the probe will display this information digitally in the MAG-81 digital readout window. See Figure 1.

The magnetic probe picks up a signal which indicates engine Top Dead Center. The trigger pickup indicates when the #1 spark plug fires. Tester electronics then uses this information to provide a digital readout of the exact engine timing at any moment at any speed.

PREPARATION

The MAG-81 unit is connected to a designated engine performance scope tester and functions as a supplement to this tester.

1. Turn scope tester AC power on and MAG-81 will light.

2. Prepare scope tester and make test connections in the usual manner with the following exceptions for Domestic made vehicles.

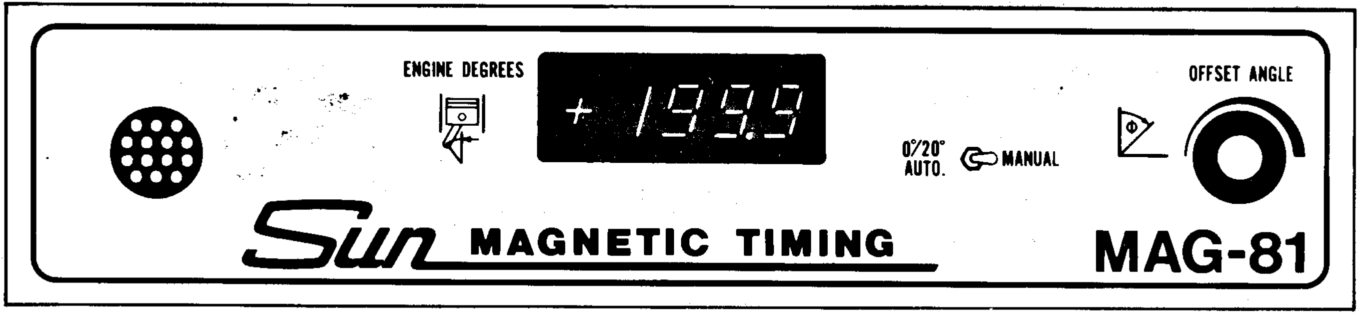

FIGURE 1 — MAG-81 front panel.

CONNECTIONS FOR DOMESTIC MADE VEHICLES

The list of Domestic made cars equipped for magnetic timing cannot be compiled with 100% accuracy, especially on older cars.

To check a car for a magnetic probe holder, refer to the 1977 and 1978 Sun specification cards. The timing mark illustration shows the probe holder and location on engines so equipped. Refer also to the illustrations of probe holders in this manual.

Using this information and the application chart following, the probe holder for any vehicle so equipped can be located. Domestic Made Cars Equipped for Magnetic Timing are as follows:

General Motors Corp.

Oldsmobile —1974 up
Cadillac —1975 up
Chevette —1976 up
All Divisions — 1977 with a few exceptions
All Divisions — 1978 except Pontiac 4 cylinder

Chrysler Corp.

1976 — 400 CID engines
1977 — 400 and 440 CID engines
1978 — All

Ford Motor Co.

All — 1975, '76, '77, '78 — California Vehicles
1978 Lincoln Versailles and all 2.3 liter engines
1979 All engines with EEC Control system

American Motors and Jeep

1977 — Some Models
1978 — All Models

Import Vehicles

Some import vehicles have built in magnetic T.D.C. sensors connected to a test harness adapter. These vehicles use a 20° offset angle.

The 0°/20° Auto position of the Manual-Auto selector switch is for future use on these vehicles.

Connection To Vehicles

1. Mount the Magnetic Pickup probe adapter as follows:
   a. American Motors and General Motors — no adapter needed.
   b. Chrysler Products — (1) **Early type** for horseshoe shaped holder, use Adapter C-1. Position adapter in timing bracket on timing cover as shown in Figure 2. (2) **Late type** for insert type holder, insert Adapter C-2 in timing bracket on timing chain cover. See Figure 3.

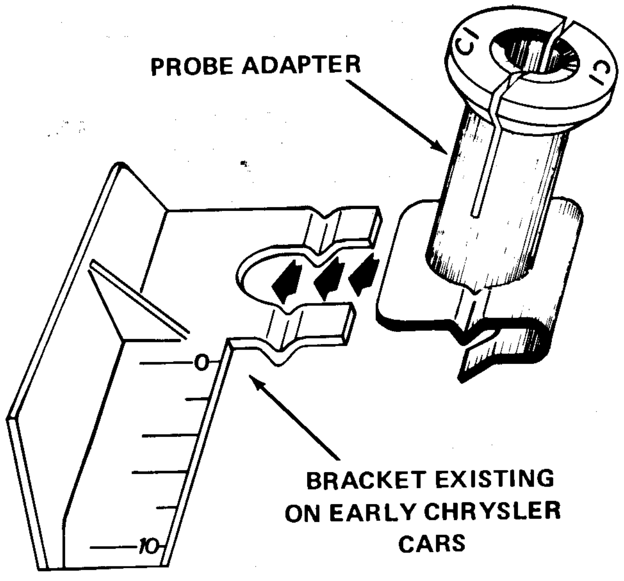

FIGURE 2 — Adapter for early Chrysler cars.

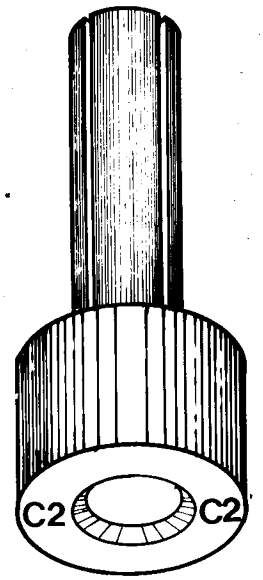

FIGURE 3 — Adapter for late Chrysler cars.

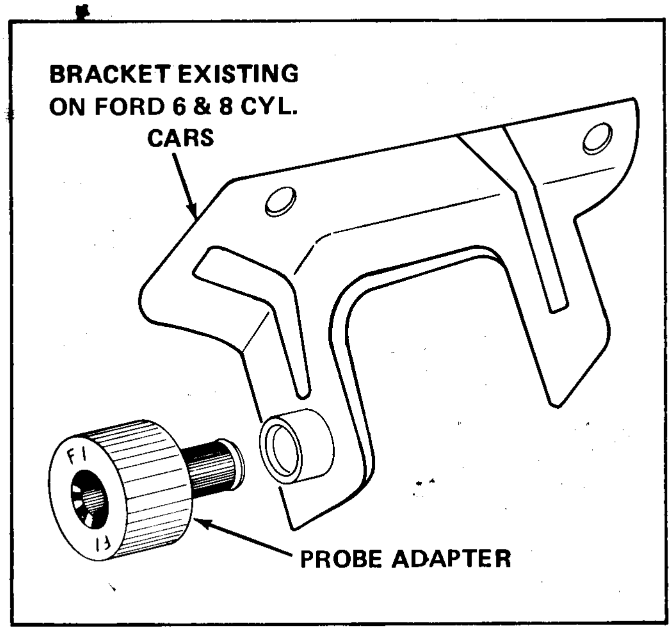

FIGURE 4 — Adapter for Ford cars except 2300 cc engine.

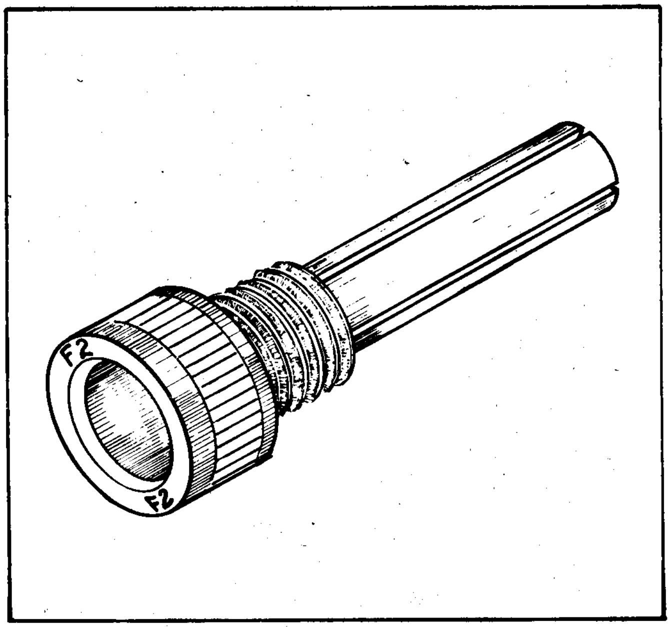

FIGURE 5 — Adapter for Ford cars with 2300 cc engine.

c. Ford — (except 2300 cc engine) insert special Ford Probe Mounting Adapter F-1 in timing bracket on timing chain cover (V-8, V-6 and L-6 engines so equipped). See Figure 4.

d. Ford 2300 cc engine — remove the threaded 13 mm hex plug from the left rear of the engine and screw the special Ford Probe Mounting Adapter F-2 in the opening (finger tight). See Figure 5.

NOTE: Any adapters used must be removed after testing is completed.

2. Insert the Magnetic Pickup probe in the holder so that the probe tip is in contact with the engine vibration dampener (except 2300 cc Ford Engine).

3. On the 2300 cc engine, insert probe in opening provided until the lock ring on the probe contacts the adapter. This permits the probe to enter to the proper depth.

CAUTION: Make sure that the probe and lead assembly is clear of fan, pulleys, etc.

Setting Offset Angles For Domestic Vehicles

1. Determine proper Offset Angle:

   American Motors is minus (—) 9.5°.
   Chrysler is minus (—) 10.0°.
   Ford is minus (—) 135°, except 2300 cc engine is minus (—) 52.5°.
   General Motors is minus (—) 9.5°.

2. Start engine and set offset angle using the OFFSET ANGLE knob.

   NOTE: Adjust the knob until the exact offset angle desired appears in the digital readout. (Red Trigger pickup must not be connected while setting offset angle.)

3. Connect the Red Trigger Pickup around the #1 spark plug, and engine timing should appear in the digital readout.

4. Make all of the normal timing checks that are done with a timing light using the MAG-81.

COMPONENTS AND ACCESSORIES (ORDERING)

Be sure to order by the Sun part number.

Lead and Probe Assembly	— Sun #7009-1386
Early Chrysler Probe Adapter C1	— Sun #7054-0057
Late Chrysler Probe Adapter C2	— Sun #7054-0062
Ford Probe Adapter F-1	— Sun #7054-0056
Ford Probe Adapter F-2	— Sun #7054-0060

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